

## PATENT ABSTRACTS OF JAPAN

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(71)Applicant : FUJITSU LTD

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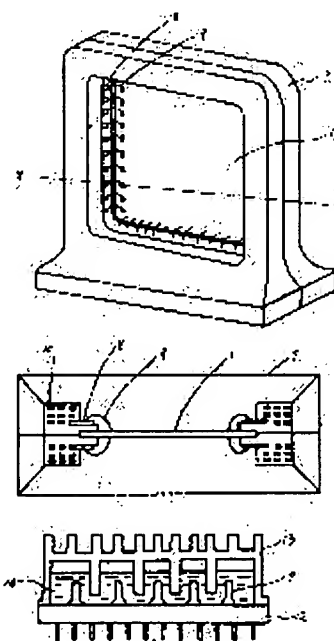
(72)Inventor : YOKOUCHI KISHIO  
NIWA KOICHI

## (54) CHIP CARRIER

## (57)Abstract:

PURPOSE: To enable the formation of an IC on both side surfaces of a chip as required by fixedly connecting the periphery of an element with carrier of frame shape, forming a projection to become nuclide of ebullition on the back surface of the element, thereby enhancing the efficiency of ebullition type colling for the element.

CONSTITUTION: A chip carrier 7 is formed in an indexing frame, a chip 1 is secured only at the periphery, and is electircally connected to the lead 8 of the carrier 7 via a wire 9. An uneven surface is formed by a method, e.g., etching or the like on the surface not formed with the IC of the chip 1 to become the nuclide of ebullition of coolant. This carrier 7 is placed on a circuit substrate 12 with a terminal provided on the bottom in a plurality, is covered with a metallic package 13 having fins, coolant liquid 14 is filled therein and the carrier is thus operated. In this manner, it can enhance the efficiency of ebullition type cooling of the coolant. The IC can be formed on each of both sides of th chip 1, thereby enhancing the integration of the chip.



## LEGAL STATUS

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INVENTOR-INFORMATION:  
NAME

YOKOUCHI, KISHIO

NIWA, KOICHI

ASSIGNEE-INFORMATION:  
NAME  
COUNTRY  
FUJITSU LTD

N/A

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APPL-DATE: October 15, 1980

INT-CL (IPC): H01L023/32, H01L023/34

US-CL-CURRENT: 257/715, 257/E23.088 , 439/485

ABSTRACT:

PURPOSE: To enable the formation of an IC on both side surfaces of a chip as

required by fixedly connecting the periphery of an element with carrier of frame shape, forming a projection to become nuclide of ebullition on the back surface of the element, thereby enhancing the efficiency of ebullition type cooling for the element.

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